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ularly in No. 137, spores which reach a diameter of 40-41 micromillimeters. My type specimens attain 54-56 microm., but I see that there is great variety in the dimensions of the spores. I also see that the diagnostic value of the terminal cells of the leaves is purely relative, as in my type specimens the point is very much developed, whereas in your specimens it is shorter, and the upper leaves near the perichætium have not the prolongation into a uniserial set of cells. I find the cochleariform base of the leaves and the long defluent neck of the capsule, as well as its small size and pale color, more constant characters."

These observations agree with my own, only I should add that the tips of the leaves vary even on the same plant, those of the younger branches being more filiform pointed than the lower ones.

The species has now been collected in five localities. The type is from the Cascades of the Rigi, near Clear Lake, Washington, Röhl. It has also been collected at Weston, by Röhl, on *Alnus rubra*, Nooksack River, Whatcom county, Washington, by W. N. Suksdorf, 1890; on trunks of Hemlock (*Tsuga Pattoniana*) Traille River Valley, Idaho, No. 234, by J. B. Leiberger, besides Macoun's locality at New Westminster Junction, British Columbia.

### New Piperaceæ from Bolivia.

BY C. DE CANDOLLE.

PEPEROMIA R. & Pav.

P. PSEUDO-RUFESCENS, glabra foliis modice petiolatis rotundatae ovatis novemnerviis nervo centrali paulo supra basin alternotim nervum utrinque unum mittente lateralibus nervis fere medio bifurcatis, amentis oppositifolius modice pedunculatis ipsis florentibus quam folia brevioribus in sicco rufescentibus subdensifloris, bractea orbiculari fere centro peltata ovario emerso globoso-elliptico apice imo stigmatifero stigmate carnoso rotundato puberulo.

In Bolivia prope Cochabamba (Bang n. 1148<sup>a</sup> in n. herb. Columb. Coll.)

Herba erecta? inferne radicans caule in sicco complanato coriaceo inferne 6 mm. crasso. Limbi in sicco membranacei

subpellucidi pellucido-punctulati, caulini ad 6 cm. longi 5 cm. lati basi cordati, ramulorum minores ad  $4\frac{1}{2}$  cm. longi et ad 4 cm. lati. Petioli foliorum caulinorum ad 3 cm. longi. Pedunculi circiter 1 cm. longi. Amenta florentia  $2\frac{1}{2}$  cm. longa circiter 2 mm. crassa.

Species *P. rufiscentis* C. D. C. proxima petiolis brevioribus limbis noveninerviis nervulisque magis conspicuis discrepans.

*P. Mandonii* (C. D. C. in Prodr. 17: Part 1, p. 395),  $\beta$  EXCELSIS  
Herba ad 30 cm. alta. Limbi 25–30 mm. longi.

In Bolivia, prope Sorata (No. 1299 in h. Columb. Coll.).

P. PSILOPHYLLA, tota glabra foliis longiuscule petiolatis ovatis basi rotundatis subcordatisve apice brevissime acuminatis acumine acuto subacutore utrinque glabris 11-plinerviis nervis utrinque 5 e basi unoque e centrali infra limbi medium ortis, amentis longiuscule pedunculatis folia pluries superantibus, bractea orbiculari subsessili, ovario emerso vertice oblique complanato-rotundata apiceque imo subacutato verticis in medio stigma parvum carnosulum gerente.

In Mapiri (Bang n. 1516 a in h. Columb. Coll.)

Herba ad arbores scandens caulis 3 mm. crassus in sicco complanatus coriaceus. Folia alterna. Limbi in sicco coriacei opaci pellucido-punctulati ad 6 cm. longi et ad  $4\frac{1}{2}$  cm. lati. Petioli ad 5 cm. longi. Pedunculi circiter 3 cm. longi. Amento in sicco 3 mm. crassa obscure rufescentia florentia ad 23 cm. longi.

#### PIPER L.

P. LONGESTYLOSUM, foliis brevissime petiolatis lanceolato-oblongis basi inæquali acutis apice acute acuminatis supra glabris subtus ad nervos nervulosque adpresse hirtellis, nervo centrali paulo ultra  $\frac{1}{2}$  longitudinis nervos adscendentes utrinque 5–6 mittente, petiolo basi ima vaginante utrinque parce hirtello, amentis sessilibus cylindricis quam foliorum limbi pluries brevioribus, bractea spathulata apice extus hirtella, bacca glabra ovata apice in stylum longum stigmatibus minutis terminatum producta.

Espirito Santo, in vicinitate Cochabama (Bang n. 1,233 in h. Boiss. et h. Columb. Coll.).

Ramuli breviter hirtelli, amentiferi in sicco 2 mill. crassi, cortice fasciculis collenchymatosis discretis instructo fibris destituto. Limbi ad 14 cm. longi  $4\frac{1}{2}$  cm. lati in sicco membrancei pellucido-punctulati. Petioli ad limbi latus longius circiter 6 mm. longi. Amenta fere matura 2 cm. longa, 8 mm. crassa. Stamina 4 antheris deciduis. Bacca circiter 2 mm. longa. Stylus 3 mm. superans.